

Incommensurate nano-scale helical pitch evolution through the smectic- C_α^* -smectic- C^* transition

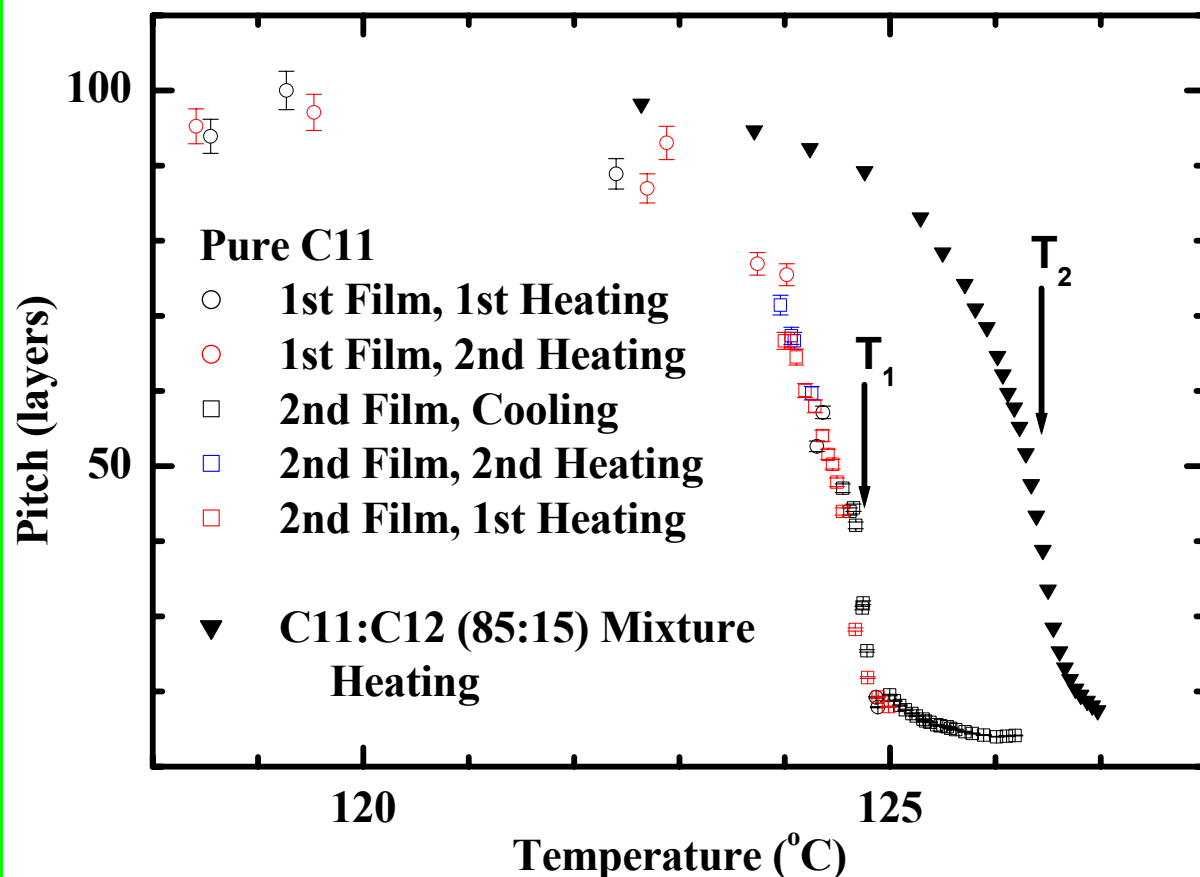
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The smectic- C_α^ -smectic- C^* transition is characterized by nano-scale helical pitch change. Resonant x-ray diffraction has been used to obtain the pitch evolution near the critical point of this transition.*

Near T_1 : first order transition,

T_2 : continuous evolution

Layer thickness = 3.5nm



High Resolution Optical Investigations of Layered Materials with Net Polarization

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Education:

Two undergraduates (Peter Hauck and Nicholas Voshell), four graduate students (Jack Han, Suntao Wang, John Liu, and Siling Wang), and one visitor (Mick Veum, assistant professor at University of Wisconsin-Stevens Point) contributed to this work.

Undergraduate Hauck will be a junior at Cornell University. Liu spent nine months at NSLS, Brookhaven National Lab. to conduct critical research projects using small angle x-ray diffraction. Han received his Ph.D. in 2004 and is presently a research associate at Advanced Photon Source, Argonne National Lab.

Outreach:

Professor Mick Veum has tested some critical experimental designs during his stay in my research group this summer. Upon returning to the University of Wisconsin-Stevens Point this Fall semester, Veum will continue his research project with the participation of, at least, two undergraduate students from his home department.